

What is claimed is:

1. A ferroelectric register, comprising:

a pull-up switch for outputting a power voltage when a
5 pull-up enable signal is activated;

a pull-up driving unit for receiving the power voltage
from the pull-up switch, and for pulling up a voltage of a
data storage node to the power voltage;

a write enable control unit for transmitting a
10 differential data to the data storage node according to a
write control signal;

a ferroelectric capacitor unit including at least two
ferroelectric capacitors connected in parallel between the
data storage node and a plate line, and storing the
15 differential data when a cell plate signal is activated;

a pull-down switch for transmitting a ground voltage
to the data storage node when a pull-down enable signal is
activated; and

a pull-down driving unit for receiving the ground
20 voltage from the pull-down switch, and for pulling down the
voltage of the data storage node to the ground voltage.

2. The ferroelectric register of claim 1, wherein, in
the ferroelectric capacitor unit, at least two ferroelectric
25 capacitors share the same ferroelectric layer on the same

plane.

3. The ferroelectric register of claim 1, wherein, in the ferroelectric capacitor unit, at least two ferroelectric
5 capacitors are formed by stacking ferroelectric layers symmetrically upon and beneath a common electrode layer.

4. The ferroelectric register of claim 1, wherein, in the ferroelectric capacitor unit, at least two ferroelectric
10 capacitors are connected in parallel between the data storage node and the ground voltage.

5. The ferroelectric register of claim 1, further comprising a cell plate voltage control unit for pumping the
15 cell plate signal from a power voltage level to a pumping voltage level according to a cell plate control signal and a power voltage control signal.

6. The ferroelectric register of claim 5, wherein the
20 cell plate voltage control unit comprises:

a delay unit for outputting a delay signal by delaying the cell plate control signal for a predetermined time;

a pumping unit for outputting a pumping signal by pumping the power voltage to a pumping voltage level
25 according to the delay signal, when receiving the power

voltage control signal; and

a level control unit for outputting the pumped cell plate signal by level-shifting the pumping signal and the cell plate control signal.

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7. The ferroelectric register of claim 5, wherein, in the ferroelectric capacitor unit, at least two ferroelectric capacitors are connected in parallel between the data storage node and the ground voltage.

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8. The ferroelectric register of claim 5, wherein, in the ferroelectric capacitor unit, at least two ferroelectric capacitors share the same ferroelectric layer on the same plane.

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9. The ferroelectric register of claim 5, wherein, in the ferroelectric capacitor unit, at least two ferroelectric capacitors are stacked symmetrically upon and beneath a common electrode layer.

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10. A method for manufacturing a capacitor of a ferroelectric register, comprising:

a first process for forming at least two bottom electrode layers commonly connected to an output terminal of the register;

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a second process for forming a ferroelectric layer commonly corresponding to at least two bottom electrode layers on the two bottom electrode layers; and

a third process for forming a top metal layer receiving a cell plate signal and commonly corresponding to at least two bottom electrode layers on the ferroelectric layer.

11. A method for manufacturing a capacitor of a ferroelectric register, comprising:

a first process for forming a contact plug on a bit line;

a second process for sequentially stacking a first electrode layer, a first ferroelectric layer, a second electrode layer, a second ferroelectric layer and a third electrode layer on the contact plug;

a third process for forming an insulation film on the third electrode layer;

a fourth process for forming a first contact hole for opening a predetermined area of the bit line and a second contact hole for opening a predetermined area of the third electrode layer on the insulation film; and

a fifth process for electrically connecting the bit line to the third electrode layer by performing a metal process on the resulting structure on which the first and

second contact holes have been formed.